

## CLAIM LISTING

- 1 1. (Original) A photonic crystal structure containing a microcavity structure that is doped with  
2 materials that exhibit electro-magnetic induced transparency (EIT) so as to increase the non-linear  
3 properties of said photonic crystal systems.
- 1 2. (Original) The microcavity structure of claim 1, wherein said materials are doped with one EIT  
2 atom.
- 1 3. (Original) The microcavity structure of claim 2, wherein said materials are doped using a  
2 scanning tunnel microscope related techniques.
- 1 4. (Original) The microcavity structure of claim 1, wherein said materials are doped with a plurality  
2 of EIT atoms.
- 1 5. (Original) The microcavity structure of claim 4, wherein said materials are doped using a  
2 scanning tunnel microscope.
- 1 6. (Original) The microcavity structure of claim 1, wherein said photonic crystal structure is a three  
2 dimensional photonic crystal structure.
- 1 7. (Original) The microcavity structure of claim 1, wherein said photonic crystal structure is a two  
2 dimensional photonic crystal structure.
- 1 8. (Original) The microcavity structure of claim 1, wherein said photonic crystal structure is a  
2 multi-layered structure of varying indices.
- 1 9. (Original) The microcavity structure of claim 8, wherein said multi-layered structure forms a  
2 multi-layered film.

- 1 10. (Withdrawn) A method of forming a microcavity structure comprising:  
2 providing a photonic crystal structure that includes a point defect region; and  
3 doping said photonic crystal with materials that exhibit electro-magnetic induced  
4 transparency (EIT) so as to increase the non-linear properties of said photonic crystal systems.
- 1 11. (Withdrawn) The method of claim 10, wherein said materials are doped with one EIT atom.
- 1 12. (Withdrawn) The method of claim 11, wherein said materials are doped using a scanning tunnel  
2 microscope related techniques.
- 1 13. (Withdrawn) The method of claim 10, wherein said materials are doped with a plurality of EIT  
2 atoms.
- 1 14. (Withdrawn) The method of claim 13, wherein said materials are doped using a scanning tunnel  
2 microscope related techniques.
- 1 15. (Withdrawn) The method of claim 10, wherein said photonic crystal structure is a three  
2 dimensional photonic crystal structure.
- 1 16. (Withdrawn) The method of claim 10, wherein said photonic crystal structure is a two  
2 dimensional photonic crystal structure.
- 1 17. (Withdrawn) The method of claim 10, wherein said photonic crystal structure is a multi-layered  
2 structure of varying indices.
- 1 18. (Withdrawn) The method of claim 17, wherein said multi-layered structure forms a multi-  
2 layered film.